

WHAT IS CLAIMED IS:

1. An image sensor having a plurality of pixels, each pixel comprising:

a photocell for receiving light and generating an analog signal

5 corresponding to a quantity of the received light;

a comparator for comparing the analog signal of the photocell and a reference signal and generating a digital signal having a value of the compared result; and

a switch for outputting the digital signal of the comparator.

10

2. The image sensor as claimed in claim 1, wherein the digital signal is

a digital signal having a 1-bit structure.

3. The image sensor as claimed in claim 1, wherein the reference signal

15 is an analog signal of a photocell of an adjacent pixel.

4. The image sensor as claimed in claim 1, wherein the reference signal

is a reference voltage.

20

5. The image sensor as claimed in claim 1, wherein the photocell is a

photo diode that generates a photocurrent corresponding to the received quantity of light.

6. The image sensor as claimed in claim 1, wherein the comparator is a

latch type comparator which outputs a first signal when the analog signal of the photocell is greater than the reference signal and outputs a second signal when the analog signal of the photocell is less than the reference signal.

5 7. An image sensor comprising:

 a) a plurality of pixels, each having

 a first photocell for receiving light and generating a first analog signal corresponding to a quantity of the received light,

 a comparator for comparing the analog signal of the first photocell and a
10 reference signal and generating a digital signal having a value of the compared result, and

 a switch for outputting the digital signal of the comparator; and

 b) at least one second photocell for generating a second analog signal corresponding the received quantity of light.

15

 8. The image sensor as claimed in claim 7, wherein the digital signal is a digital signal having a 1-bit structure.

 9. The image sensor as claimed in claim 7, wherein the reference signal
20 is an analog signal of an adjacent photocell of an adjacent pixel.

 10. The image sensor as claimed in claim 7, wherein the reference signal is a reference voltage.

11. The image sensor as claimed in claim 7, wherein at least one of the first and second photocells comprises a photo diode and a transistor, the photodiode generating a photocurrent corresponding to the received quantity of light.

5

12. The image sensor as claimed in claim 7, wherein the comparator is a latch type comparator which outputs a first signal when the analog signal of any one of the first and second photocells is greater than the reference signal and outputs a second signal when the analog signal of any one of the first and second photocells is less than the reference signal.

10

13. The image sensor as claimed in claim 7, wherein the second photocell is arranged inside each of the plurality of pixels.

15

14. The image sensor as claimed in claim 7, wherein the second photocell is arranged outside each of the plurality of pixels.

15. An optical pointing system comprising:

a) a plurality of pixels, each having

20

a photocell for receiving light and generating an analog signal corresponding to a quantity of the received light, and

a comparator for comparing the analog signal of the photocell and a reference signal and generating a digital signal having a value of the compared result;

b) an image processor for calculating a movement value using the digital signals outputted from the plurality of pixels and generating a pixel select signal and a shutter control information signal; and

c) a shutter control circuit for generating a shutter control signal
5 corresponding to the shutter control information signal of the image processor.

16. The optical pointing system as claimed in claim 15, wherein each of the plurality of pixels further comprises a switch for outputting the digital signal of the comparator under the control of the pixel select signal.

10 17. An optical pointing system comprising:

a) a plurality of pixels, each having

a first photocell for generating a first analog signal corresponding to a received quantity of light, and

15 a comparator for comparing the first analog signal of the first photocell and a reference signal and generating a digital signal having a value of the compared result;

b) at least one second photocell for generating a second analog signal corresponding the received quantity of light;

20 c) an image processor for calculating a movement value using the digital signals outputted from the comparators and generating a pixel select signal; and

d) a shutter control circuit for generating a shutter control signal using the second analog signal outputted from the second photocell.

18. The optical pointing system as claimed in claim 17, wherein each of the plurality of pixels further comprises a switch for transmitting the digital signal outputted from the comparator in response to the pixel select signal.

5

19. The optical pointing system as claimed in claim 18, wherein the second photocell is arranged inside each of the plurality of pixels.